



# **2018 ANNUAL REPORT**

to the  
**TENNESSEE STATE BUILDING COMMISSION**



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February 6, 2019

**T**his Annual Report to the Tennessee State Building Commission (SBC) describes preservation and significant maintenance and management work completed on historic and cultural resources at Andrew Jackson's Hermitage by the Andrew Jackson Foundation (AJF) in calendar year 2018 and proposed work for calendar year 2019. This annual report submission is required under Tennessee Code Annotated section 4.13.104. The following is a brief description of proposed property acquisition, construction, demolition, alteration, restoration, or preservation works in progress. Projects involving routine maintenance and minor repairs are not included. Projects are listed in order of priority.

## **Hermitage Mansion**

### **Projects Under State Grant SBC 529/000 05 2013**

In August 2013, the State of Tennessee granted \$660,000 to the Andrew Jackson Foundation to complete repairs to the Hermitage mansion. In August 2015, the State of Tennessee granted an additional \$154,000 through this grant to aid the AJF in the repair of the Hermitage mansion windows and replacement of interior storm windows. In August 2016, the State of Tennessee granted a second additional sum of \$650,000 through this grant to aid the AJF in the replacement of the Hermitage mansion's deficient fire suppression system. These additions brought this grant total to \$1,464,000. The funding in this grant is divided among three project areas: \$359,000 for Phase 2 of the Hermitage Mansion Exterior Restoration; \$214,000 for Hermitage mansion interior repairs, repainting exterior doors, and to repair windows and replace interior storm windows; and \$891,000 to analyze and upgrade the Hermitage mansion's fire detection, fire suppression, and security systems. As of December 31, 2018, all funds under this grant have been spent and all work is complete.

### **2018 Hermitage Mansion Automatic Water Mist Fire Suppression System Update**

Since 2013, the AJF's Annual Reports to the State Building Commission contained detailed reports on the deficiencies of the Hermitage Mansion's fire alarm and suppression systems. The fire alarm system was replaced in 2015 and is operating as expected. At the end of 2017, the AJF reported to the Office of the State Architect its decision to replace the existing fire suppression system in the Hermitage Mansion with an automatic water mist fire suppression system, manufactured by Ultra Fog of Sweden. Fireline Corporation of Baltimore, MD was selected by the AJF as the installation contractor and Nick Artim of Heritage Preservation Group was hired as the lead engineer on the project. The Office of the State Architect approved the design and contracts for the project. The Nashville Fire Marshall also approved the design of the system.

In January 2018, Fireline began the project with the installation of stainless-steel piping to each sprinkler head location. Stainless steel high-pressure compression fittings were required for this system because it operates at a pressure above 2000 psi and must test successfully to pressures near 3000 psi. Installing the piping required re-opening the same channels in the mansion ceilings and walls that were opened in 1988 to install the existing sprinkler system.

Please note that **no new penetrations** were required to accommodate the Ultra Fog piping. Piping installation was completed in June 2018.



*Typical channel cut in Hermitage mansion ceilings to install stainless steel pipe. All penetrations followed the same channels as the 1988 fire suppression system.*



*Typical Ultra Fog sprinkler head and stainless-steel supply piping in Hermitage mansion.*

In May 2018, Fireline began installation of the Ultra Fog control panel, high pressure pumps, reserve water supply tanks, and an accumulator back-up system. In this system the control panel monitors a multitude of pressure sensors and alarms that report problems or the

activation of a sprinkler head to the control panel, which would then initiate the pumps to suppress a fire. Four pump units (see front cover) move water through the suppression system piping at high pressure and when the water reaches an activated sprinkler head it is forced through tiny openings to create mist. In a fire, the pumps are activated based on the demand for water with a maximum of three pumps needed to run the system. The fourth pump is a stand-by in the event of a pump failure. Four nearby reserve water tanks holding 1200 gallons of water can be pumped into the Ultra Fog system if city water pressure falls below acceptable levels. If the Ultra Fog control panel and pumps are without power, a battery pack in the Ultra Fog control panel keeps the sensors and monitoring devices online. In the event of a fire during power loss, the Ultra Fog control panel will initiate the accumulator backup system. The accumulator system consists of 10 high pressure nitrogen tanks and 10 water tanks that push water at 3000 psi to activated mist heads to extinguish a fire. Depending on the number of activated heads, the accumulator backup will suppress a fire for 5 to 15 minutes. The accumulator system is a tried and tested backup that provided a solution that fit the AJF's project budget. However, the AJF's long term goal is to install a stand-by power generator to keep the Ultra Fog powered at all times.



*Ultra Fog Control Panel in the Hermitage basement.*





*Ultra Fog Pump Unit.*



*Four Ultra Fog reserve water tanks in the Hermitage basement.*



*Ultra Fog Accumulator Backup System for use during power loss.*

Fireline completed installation of the above-mentioned devices in August 2018. In early September 2018, Ultra Fog technicians along with Fireline personnel put the system through an extensive commissioning trial and Ultra Fog certified the system as operational. As of December 31, 2018, all work on the system was complete.

In addition to Ultra Fog's Automatic Water Mist Fire Suppression System, Fireline also renovated the existing 1988 dry-pipe sprinkler system to service the Hermitage mansion's exterior porches. Water mist fire protection is not effective in outdoor spaces because of wind and mist dissipation. Renovations included: rebuilding the deluge valve; installing all new schedule 40 piping to sprinkler head locations, and installing new sprinkler heads. This dry-pipe system is fully operational and has been inspected and approved by the Nashville Fire Marshall's Office.

### **Hermitage Mansion Projects 2019**

The only significant project planned for the Hermitage Mansion in 2019 is repainting the exterior except for the South Portico. Projects beyond 2019, include repairs to the limestone South Portico floor and repainting the South Portico. The Andrew Jackson Foundation will also focus on funding for a stand-by emergency power generator for the Hermitage mansion.

## State of Tennessee Land Transfer

In October 2018, Governor Bill Haslam signed a quitclaim deed transferring ownership of 460 acres of land belonging to the State of Tennessee to the Andrew Jackson Foundation. Historically, this land comprised a significant portion of the northern 500 acres of The Hermitage from 1806 until Andrew Jackson Jr. sold it in 1858. The State of Tennessee purchased the land from private owners in two separate transactions in the early 1970s to preserve it from development. After purchasing the land, the State of Tennessee maintained it as a wildlife management area until 2002, when the land was leased to the AJF for a 30-year term.

The AJF requested that these 460 acres be placed in its ownership, so that the Foundation's Board of Trustees could begin to make long term plans and subsequent investments in the property. Now that these 460 acres are part of the trust granted to the AJF it is subject to Tennessee Code Annotated sections 4-13-101 through 4-13-111. Section 4-13-102 (b)(3) provides the mechanism for adding land to the AJF's trust.



*1120-acre landholdings of the AJF as of October 2018.*



## **Rachel and Andrew Jackson's Tomb**

### **2018 Vandalism and Repair**

At sunrise on April 27, 2018, AJF Staff discovered spray painted graffiti on the tomb of Rachel and Andrew Jackson. The graffiti consisted of political statements, such as ANTIFA symbols and obscenities. The spray paint was applied to the inscribed vault covers and the central obelisk on a pedestal monument. The spray paint appears to have been a high-performance oil-based paint that penetrated the stone. Rachel and Andrew's Tomb is comprised of soft porous Tennessee limestone.

AJF Staff immediately began a search for the best qualified conservators to remove the spray paint. After a thorough search of companies and a rigorous check of qualifications and references, the AJF hired Conservation of Objects and Sculpture Studio, Inc. (CSOS) from Chicago. CSOS specializes in removing graffiti from stone and metal surfaces and cleaning dirt and residue from surfaces. CSOS has developed a state-of-the-art laser cleaning system that can safely clean objects ranging from paintings on wood to granite. In addition, the AJF hired local conservator Shelley Reismann Paine to consult with CSOS due to her extensive experience with Tennessee limestone.

CSOS began the removal process in late May 2018 and completed work in early June. Laser treatments proved effective in removing paint pigment on the surface of the stone. Unfortunately, the oil-based binder for the pigment penetrated through the stone. CSOS had to employ repeated chemical poultices to the stone to draw the binder up to the surface where it could then be removed by the laser. In some areas, CSOS had to repeat the poultice then laser treatment four to five times. Removal took about two weeks total and the cost for removal was \$46,000. Chubb Insurance paid for the removal through the AJF's property insurance.

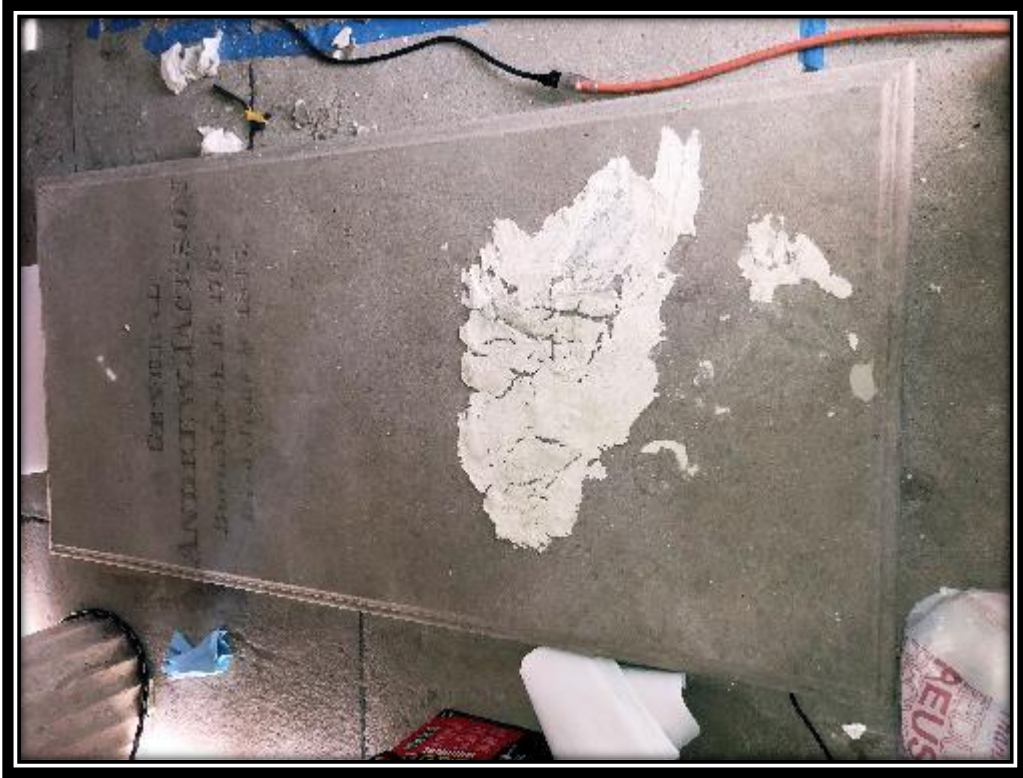




*Graffiti on Andrew Jackson's vault cover, April 2018.*



*Laser graffiti removal from Andrew Jackson's vault inscription, May 2018.*



*Chemical poultice used to pull oil stain out of stone, May 2018.*



*Removal process completed, June 2018.*

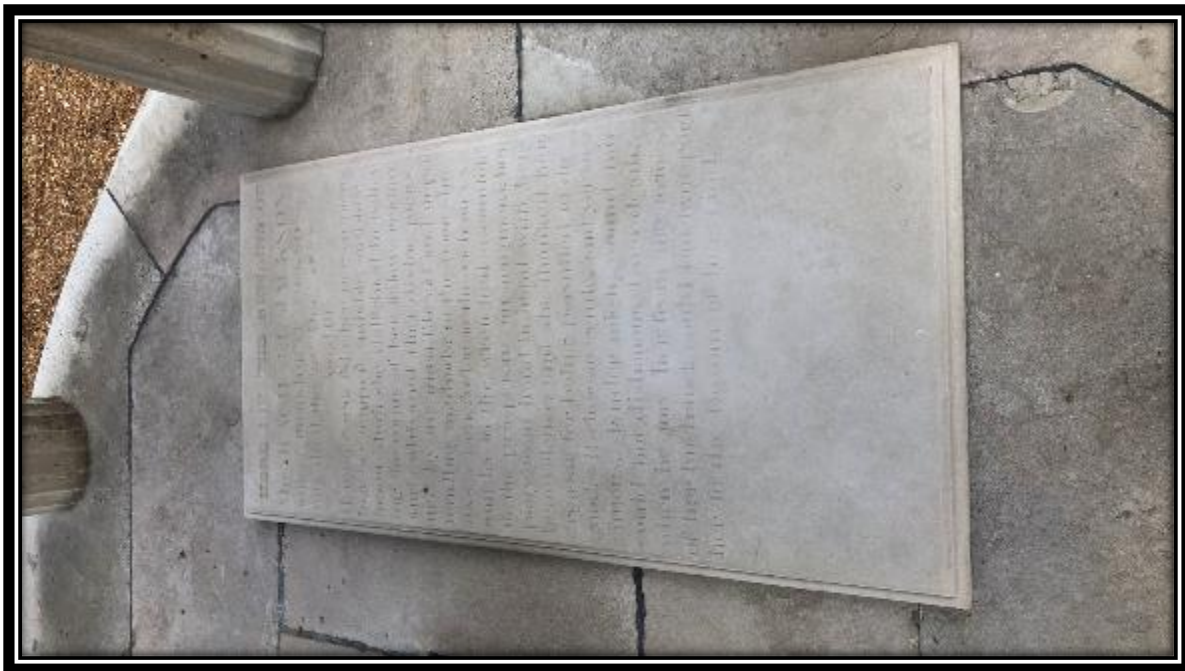


### **2019—Additional Tomb Cleaning, Preventative Coatings, and Security Enhancements**

At the end of the graffiti removal process, CSOS recommended that the AJF completely clean the entire tomb surface so that it blended with the intensively cleaned areas that had been tagged with graffiti. CSOS also recommended removing and replacing inappropriate patching material, sealing the copper dome roof to prevent copper salts from further staining the tomb, and limewashing the concrete underside of the dome. CSOS also encouraged the AJF to pay close attention to ongoing research into graffiti proof coatings for stone but advised against using any products currently on the market because those coatings are not reversible. If a suitable coating is developed it could protect the tomb from future vandalism by preventing the spray paint from adhering to or penetrating the surface.

The total cost for CSOS's recommended additional treatments was \$136,000 including scaffolding. Chubb Insurance concurred with CSOS's opinion that the entire tomb surface required cleaning. Chubb paid an additional \$78,000 to the AJF for this work. The AJF is actively raising funds and seeking grants to cover the remaining \$58,000 of work recommended by CSOS. The AJF and CSOS expect to begin this additional work in August or September 2019.

Since the vandalism at the tomb, the AJF Security Department has been evaluated and refocused to keep Security Officers focused on the AJF's most vital assets. The duties of AJF Security Officers have been streamlined and all non-essential duties removed. The AJF has also identified the need to install additional security cameras on the property to better cover the tomb, the Hermitage mansion, and other historic buildings. The estimated cost of these additional cameras is \$75,000. The AJF is actively raising funds for this project.



*Rachel's cleaned vault cover compared to the Tomb floor, July 2018.*



*Copper salt staining on the Jackson Tomb, July 2018.*

## **New Education Facility**

The Andrew Jackson Foundation is in the early stages of raising funds and planning for a new educational facility at The Hermitage. At this time, no specific location has been selected nor has any specific building design. Site and design selection may take place in calendar year 2019. If the project advances to that stage in 2019, the AJF will work with the Office of the State Architect and the State Building Commission to allow those agencies to fulfill their oversight obligation as per Tennessee Code Annotated 4-13-104.3

## **Tulip Grove**

### **Legal Status**

As previously reported, in 2016 the Andrew Jackson Foundation bought out the remaining 45 years on the purchase contract for Tulip Grove between the AJF and one of two heirs who held an interest in that contract. In early 2018, the AJF learned that the other heir with an interest in the contract passed away. At this time, the estate is in probate. The AJF does not know what the estate's interest is in the contract. Our preference would be to buy out that remaining interest.



### **Tulip Grove's Condition**

Tulip Grove requires significant repairs to ensure the integrity of the building's envelope. This includes: re-pointing the walls and foundation; gutter, downspout, and site drainage upgrades; repair and replacement of wood trim; repairing and re-glazing all windows; and re-painting. The AJF estimates this work will cost \$750,000 to \$1,000,000 and does not expect to have funds in place to pursue this work in 2019. The AJF continues to seek funds to complete a condition analysis of Tulip Grove by a qualified preservation architect. This analysis will include preparation of measured CAD drawings, a condition report, and an historic structures report. Cost estimates for this work are \$65,000. By taking these steps the AJF will have a foundation to begin fundraising for repairs.



*A previous repointing effort at Tulip Grove was not installed deeply enough into the joint. That repointing mortar failed and took off the face of the historic lime sand mortar underneath it. Tulip Grove requires complete repointing on all elevations, December 2018.*



*Progress of mortar joint decay on West Elevation, December 2018.*



*Foundation mortar joint deterioration at Tulip Grove kitchen, December 2018.*





*Rotted trim board on north wing east elevation at roofline, December 2018.*



*Typical window glazing and paint deterioration, September 2018*



*South wing east elevation showing gable rake deterioration, December 2018.*



*North elevation northeast cornice return and gable rake condition, December 2018.*



## Jackson and Donelson Family Cemeteries

### Cleaning, Repair, and Replacement

In general, the gravestones in the Jackson and Donelson Family Cemeteries are in fair condition. In 2018, staff and volunteers cleaned the gravestones in both cemeteries. In the Donelson Family Cemetery, the vault style memorials for Captain John Donelson and Mary Purnell Donelson are unstable because of cracks in the stones and require immediate stabilization once funds become available.



*Condition of Captain John Donelson's (Rachel Jackson's oldest brother) Monument in the Hermitage Churchyard.*

### Jackson Family Cemetery Project 2018

In 2018, the Andrew Jackson Foundation hired Renaissance Stone, Hutchins Stoneworks, and Mid-South Restoration to reset gravestones in the Jackson Family Cemetery and replace the gravestone of Ralph E.W. Earl and the shared gravestone for Andrew Jackson, Jr. and his wife Sarah. These two gravestones, both made of Tennessee limestone, were beyond the ability of conservators to repair because both had severely delaminated layers. This project began in February 2018 with approval of the replacement gravestone designs. Since Tennessee limestone is soft and its layers separate so easily it is no longer cut commercially, the AJF choose to use Indiana buff limestone as the replacement material. The Tennessee Historical Commission concurred with the selection of Indiana limestone. The replacement gravestones were cut to shape by Renaissance Stone and the inscriptions hand carved into the stone by

Hutchins Stoneworks. The new gravestones were completed in May 2018 and installed that same month by Mid-South Restorations. The original gravestones were dismantled by Mid-South Restoration and placed in steel framed wooden crates for long term storage. Mid-South Restoration also completed resetting gravestones in the cemetery that had become unstable due to soil subsidence. The total cost for this work was approximately \$77,000.

In late winter 2018, AJF Staff began transplanting vinca minor (periwinkle) into the Jackson Family Cemetery to replace the grass. The goal of this work is to eliminate the need to mow or weed eat inside the cemetery and therefore reduce damage to the remaining original gravestones.



*Comparative photographs of Sarah and Andrew Jackson Jr.'s shared original gravestone and the 2018 replacement gravestone.*





*Comparative images of Sarah York Jackson's original hand carved inscription and the hand carved inscription on the 2018 reproduction.*



*Ralph E.W. Earl's original and reproduction gravestones.*



*Ralph E.W. Earl's original hand-carved inscription compared to the 2018 hand-carved reproduction.*

## **Hermitage Church**

### **2018 Hermitage Church Repairs**

In 2017, the State of Tennessee awarded the Andrew Jackson Foundation a grant of \$130,000 to complete repairs at the Hermitage Church. Joe Oppermann, Preservation Architects, Winston-Salem, North Carolina designed the repairs for the church and the work was put out to bid in February 2018. Nashville's R.D. Herbert Roofing won the bid to replace the Hermitage Church roof. Installation of the new roof began in April and was completed in early May. Replacement shingles were cut from Alaskan Yellow Cedar to increase the longevity of the roof.

The AJF hired PowerCom Solutions to remove the lightning protection system from the Church to facilitate the roof replacement. Powercom then reinstalled and re-certified the system in May 2018. This UL Certification for the Hermitage Church is good through May 2023.

WASCO Masonry's Historic Restoration Division began repairs to the Hermitage Church's walls and foundation in May 2018. The entire foundation of the church was repointed including below grade portions of the foundation. The church's walls were repointed in emergent areas, especially around the filled-in door openings on the west elevation, filled window openings on the east elevation, the chimney shoulders, and the southwest and northwest wall corners. WASCO also cleaned all the brick and stone with a biological solution.



Bradshaw Painting of Mt. Juliet, Tennessee repainted the interior of the church including the pews in June and July of 2018.

**2019 Completion of Hermitage Church Repairs**

In late 2018, the AJF contracted with David Wylie Construction to replace the south elevation doorways, jambs, and thresholds of the Church. David Wylie Construction will also install a new metal wheelchair ramp to replace a deteriorated wood ramp that is not ADA compliant. This work will be complete by May 2019.

In April 2019, Bradshaw Painting will paint the exterior trim of the Hermitage Church and paint the new doors once installed by David Wylie Constructions. The total cost of this project is expected to be \$131,000.



*Section of Hermitage Church wood shingles showing typical deterioration, December 2015.  
Please note holes in shingle coverage.*



*New Alaskan Yellow Cedar Shingle Roof on the Hermitage Church installed by R.D. Herbert.*



*Typical repointed Hermitage Church foundation joint by WASCO, May 2018.*





*Repointed section of Hermitage Church south wall prior to cleaning.*



*Church door replacement will be completed in 2019. Note that doors are not original.*



*Hermitage Church Sill and threshold to be replaced in 2019.*

**End of Report**